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* DOCTORS, DISEASES AND THE POPULATION PROBLEM

by

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YOU might be wondering why I have chosen to address you on the subject of Doctors, Diseases and the Population Problem, instead of selecting the usual conventional subject of a particular disease on its clinical, laboratory or therapeutic aspects. As busy practising Physicians, you might be more interested in the latter. There is atleast a close relationship between doctors and diseases, but why bring in the population problem apparently unrelated to either from the point of view of the average functional status of the doctor in society. It would even appear detrimental to the material prosperity of the doctor, whose vested interest is disease and more disease, the greater the population the larger is the quantum of disease which the physician will be called upon to treat in his day to day practice and to his material advantage. After all, the only justification for the existence of a doctor is the patient.

Recently I undertook a motor trip along the Southern trunk road from Madras to a neighbouring district, covering about 120 miles which I had not done for nearly 16 years and at every wayside village or small township on the road, the motor ride had to be a crawl till the village limit was crossed not because of bad road but of the human and animal population clogging the high way. This was certainly not my experience 16 years ago when I travelled the same road. When I observed this tremendous upsurge of human and cattle population in village after village, with most of the children and adolescent population standing and staring with a hungry look and clothed with nothing but what they were born in, I was forced to recall the Demographer's plaint that the population of our country has been multiplying with the irresponsibility of fish and that by 1986 the present high 388 million mark may get nearly doubled with all its attendant consequences. The experience set me a thinking and when your Secretary invited me to take part in your annual function, I said to myself, let me share my disturbing thoughts with

* Paper read before the District Medical Association, Tiruchirapalli on 27th October 1957.

my brothers in the profession even at the risk of not receiving their approbation but with the hope of stimulating their thoughts on the close inter-relationship between population, poverty and disease. Poverty and disease are the obverse and the reverse of the human picture in our country. "Men and women are sick because they are poor, they became poorer because they were sick and sicker because they were poorer" thus poverty and disease chasing each other in a vicious cycle. Despite all the technological and economic progress of modern times, there are more poverty stricken people than 50 years ago.

Let me remind you of certain basic facts in regard to the demographic socio-economic and health conditions of our population. Demographers tell us that for about 60 years from 1891 the birth rate in our country has not changed appreciably maintaining a fairly high rate of about 40—50 per thousand of the population, while the death rate has registered a decline particularly during the last three decades due to the prevention of widespread famines large scale epidemics and the absence of natural calamities like earthquake. The present death rate is now about 17 per thousand of the population although it is still high as compared to the death rates in other developed countries. With the control of killing diseases by large scale public health measures in the national programme during the first and second plan periods, the death rate is likely to go down still further, thus creating an ever widening gap between birth rates and death rates. It is computed that an infant is born every two seconds in our country and five millions of new human beings to be fed, clothed and housed are being added every year to the existing population. With the nation wide food shortage, the lowest standard of life in the world, the rising cost of living, the lopsided growth of population causing an excessive accumulation of people in the lower age groups with resultant unemloyment and under employment, it would appear that any purposeful control of mortality, unaccompanied by the control of births may have disastrous consequences in still further lowering the standard of living, exposing the spawning population to the ravages of hunger, disease and destitution. In this connection, it is reported that with the eradication of malaria in certain parts of the country, the birth rate has reached an all time high in recent years and as a cynic put it, is it kind to save people from dying of malaria so that they may die more slowly of hunger or some chronic disease?

While the over all mortality rate may be declining, the morbidity or sickness rate has been going up and up and most of the diseases are preventable. But trying to prevent or cure diseases in an ever increasing population reminds me of the revolving doors of huge department stores in Western countries through which an unending stream of people go in and come out. It is not only the over-crowded and over worked hospitals in our country that bear witness to the appalling amount of sickness in the population, but the comparative prosperity of physicians in private practice in urban areas who are hard put to meet the demands of the increasing crowds of sick persons who queue up for some relief. Fortunately the antibiotics have come to the rescue of the hard pressed physicians, who could treat without diagnosis by a process of hit and miss therapy. The pressure and demand for medical care has become so great, that it has become a field day for a horde of unqualified people. I do not wish to bother you with figures of acute and chronic morbidity among our population. For one thing, we have no accurate statistics of morbidity rates except the meagre and inaccurate figures published in the annual administration reports of the medical institutions and those of the public health departments. But taking the figures as

they are available, the morbidity rates for preventable disorders, are alarmingly high. Among the acute diseases, intestinal disorders take the lead. Typhoid has become an endemic disease, even in urban areas with a protected water supply In some of the district hospitals, half the beds are occupied by typhoid cases. In the metropolis of the State, the two large teaching hospitals share between them about 200 cases of enteric patients at any one period of time. The intestinal parasites infecting the population metabolise a substantial fraction of the meagre food ingested by their human hosts. Chronic diseases—tuberculosis, leprosy and syphilis vie with each other for precedence—chronic malnutrition and under nutrition have become the lot of the common man. The individual in our country may suffer from five or six diseases at the same time or in quick succession. Apart from the preventable diseases our population are also at risk from the degenerative killing diseases of temperate climates and the stress diseases of modern competitive industrial civilisation.

Tracing the evolution of modern scientific medicine during the last 150 years, one could discern that the period before 1850, the practice of medicine was mainly symptom centered ; between 1850, and 1900 in the Pasteurean era, with the growth of bacteriology and pathology, the practice of medicine was disease centered. In the years between 1900 and 1950 with the increasing recognition of social, psychic and other environmental factors on the aetiology of disease production, the practice of medicine became patient centered. From 1950 onwards the tendency for medicine is to be community centered where the community is the patient. Unfortunately our medical education and the practice of medicine have not kept pace with the changing concept, with the result that the physician or surgeon finds satisfaction only in the treatment of disease alone or individual patients alone. The continuous fragmentation of medicine into horizontal, vertical and diagonal specialities, without any attempt at integration and synthesis has still further accentuated the concept of individual diseases separated by water tight compartment In this connection, I am reminded of a recent definition of the specialist and the general practitioner ; the former who knows more and more about less and less until finally he knows everything about nothing ; the latter who knows less and less about more and more until finally he knows nothing about every thing.

With one fifth of the world's population our country boasts of one third of the world's cattle which compete with man for food and survival. With a rapidly pullulating population, the lowest expectation of life, the highest infant mortality, the mounting morbidity rates caused by preventable diseases, we are certainly in a bad way. Every planning for economic improvement, prevention of disease and promotion of health adumbrated by our Planning Commission, the Central and State governments, will be futile unless this fish like fecundity is fought to a stand still and the balance between births and deaths is stabilised at a low level.

A question may be posed whether planning for population control should precede planning for economic development But our governments with the expert advice of the Planning Commission have launched a multipronged attack in the two five year plans, to increase food production, to exploit natural mineral or other resources, to create new industries, to promote the health and well-being of the population of the country. Among the public health measures it is a matter for gratification that the population control by purposeful family planning and limitation, has been adopted as a part of state policy. As you are all aware, the central government seized with the urgency of the problem has set apart five

crores of rupees in order to establish 300 urban and 2000 rural family planning clinics in the country in association with hospitals and maternity and child welfare organisations. Central and State Family Planning Boards have been established to give point and direction to the clinic workers. Training programmes for doctors social-workers have been established in each state and a full time Family Planning Officer is appointed to take charge of the programme. Our state has taken the lead in establishing the State Family Planning Board, the Family Planning Institute and publishing a family planning manual in English; and it is hoped the latter will be available in the regional language soon for large scale circulation. Among the methods of birth control described in the manual, most of them can only be successfully practised either singly or in combination by a very limited sector of the population, who are educated, economically secure and with the consciousness of family and social responsibilities. For the vast majority of the under-privileged, illiterate, ignorant, improvident and apathetic sections of the rural population, many of the methods of birth control prescribed are totally or partially inapplicable. The printed word is a thoroughly ineffective medium for the propagation of birth control and family planning ideas, to the vast majority of the illiterate masses amongst whom the pressure of population is acutest.

The concept, the desirability, the urgency of birth control, should be sold to the masses in heart to heart talk with the people, in private practice, in hospitals and clinics and in the Maternity and Child Welfare centres, in the primary centres attached to the Community projects and National Extension projects. Propaganda through folk songs and film shows will be a more effective method of motivating the population to the imminence of the problem of purposeful limitation of births. A few years ago, I suggested to the Indian Council of Medical Research that in their research programmes the highest priority should be accorded to the study of the psysiology of human reproduction and some fundamental research is urgently indicated to devise a simple, cheap, easy foolproof method, be it a drug orally administered or parenterally injected which would temporarily inhibit spermatogenesis or ovulation or nidation or conception. The Indian Council of Medical Research is now sponsoring medical and biological research into the physiology of re-production which may lead ultimately to the development of acceptable methods of limiting family size and population growth.

But this is a long range programme and we can ill afford to wait till a perfect method of birth control is discovered. Time does not stand still, while our fecundity rate is mounting day by day. If only the two countries, United States of America and Russia with their advanced scientific and technological resources had spent the billions of dollars and roubles developing a cheaper, dependable contraceptive instead of the hydrogen bomb, the ballistic missiles and the artificial moon, it would have contributed far more to the elimination of national fear and insecurity of those countries and would have promoted a rising standard of living for the entire world particularly the over populated and underdeveloped countries.

The dream of finding a contraceptive pill is seeming to come true. The American Chemists and Physiologists have been at it for some years working on the chemistry of steroid harmones producing a succession of synthetic harmones by suitable chemical linkages, called Progestagens. According to a report in the latest weekly news magazine "Time" (Oct. 21, 1957) one of the progestagens with the prorietary name of "ENOVID" has shown impressive results as a contraceptive in tests conducted in Puerto Rico.

265 women were selected for the trial. Only 200 actually did take the treatment. They took one tablet of Enovid a day for 20 days in the month. None became pregnant despite regularly practised copulation and with no other type of contraception. The women who missed one to five tablets, had two pregnancies in 282 cycles; while among those who missed six or more tablets, there were three pregnancies in 151 cycles. If one tablet a day could keep the baby away as well as the Midwife or the Obstetrician, there is certainly great hope for mankind. It is up to our Chemists and Physiologists to bestia themselves producing the synthetic contraceptive for large scale trial.

Among the methods now available, the mechanical and chemical methods of birth control such as the use of the condom, the diaphragm, contraceptive jellies and tablets which have found wide-spread acceptability in the advanced nations of the west, either along or in combination, are thoroughly unacceptable to the vast majority of our people for obvious reasons of poverty, ignorance, want of sanitary facilities and privacy. The use of the biological safe period does not involve any expenditure, but requires knowledge of the menstrual cycles, of the fertile and infertile days and intelligence to calculate and keep records. This will be beyond the capacity of the average woman or the urban slum dweller. The use of multicoloured beads strung as a necklace for the individual woman on the basis of the duration of the menstrual cycle was suggested by the WHO Birth Control Consultant who visited India in 1951. Three colours were chosen, orange beads to indicate the days of the menstrual flow, green beads to indicate the days of the cycle which are safe from conception and red beads for the fertile days. The woman should be instructed to move one bead daily from one side of the string to the other, beginning with the first day of menstrual flow. During the time the green beads appear she will be in her safe period and could permit intercourse, but when the red ones come round, she should sleep with her mother-in-law, miles away from her husband. I do not know whether this method of counting beads was ever tried among women in this country. I wonder how many of the rural women will be able to count.

Coitus interruptus a method stated to be widely prevalent in Western countries, will require a measure of self control that the average male may find it difficult to practise. Further it is not fair to the wife and may result in emotional tension and marital discord. The so-called mental cruelty on which divorces and separations are granted in Western countries may be a camouflaged term used by the female victims of coitus interruptus.

To achieve success in the prevention of conception, by these methods even by the educated sector of the community, like the proverbial pessimist who used both the belt and braces to achieve certainty that the trousers would stay put, individuals practising contraception should have to use a combination of these methods. I have had a number of persons coming to me and bemoaning their failure after they practised only one method of contraception. To put one's trust on perishable rubber under tropical conditions of storage reminds me of a famous Bonmot of Madame De Stael that the condom is a shield against pleasure, but only a spider's web against danger of disease, as well as conception. From another country Puerto Rico, where hundreds of thousands of condoms were distributed free to the population by the government as a method of contraception, it was reported that the greatest number of failures occurred, so much so, the people preferred the permanent method of sterilisation. None of the methods are singly reliable and are particularly inapplicable to the rural population.

Other fantastic scientifically untested methods were suggested. For example, raising the temperature of the scrotal sac by the application of woollen or other heat raising material to the scrotum in the form of a jock strap or koupinam with a view to inhibit spermatogenesis. An example is jokingly quoted of the high fecundity rate of the male during the Victorian era in England, because the majority of the people dreaded a hot bath and never took one for a whole year. But during the Edwardian and Georgian era, the Englishman started taking hot tub baths as a daily ritual with the result his fecundity suffered a great decline. Another suggestion put forward is a change in the coital position of the couple, under the belief that the sperm may miss its target and be compelled to move in reverse gear out into the inhospitable exterior. A suggestion put forward by a medical journal recently is equally fantastic. To prevent conception, individuals are asked to keep their sperm count below the fertile level, by maintaining a high frequency of ejaculation.

The only fool proof method is permanent sterilisation method of the husband or the wife The sterilisation of the husband is easier and it is a matter for gratification that the State government on the advice of the State Family Planning Board have approved the opening of free vasectomy clinics in all the state aided medical institutions. They have further offered to subsidise private physicians and surgeons who perform the operation on their patients. I would go a step further and suggest to the government that they offer sterilisation bonuses to any male who would agree to the simple sterilisation operation. Such a bonus, would appeal primarily to the poor and shiftless section of the population and would have a favourable selective influence The 'husband sterilisation' method does not interfere with libido or physical satisfaction. On the other hand, the operation may promote the general well being of the individual. It would be necessary to limit the advice and the operation of vasectomy to those who have had already three or four children. The upper limit may be four in view of the fact that among the lower middle classes and the underprivileged sections of the population, the post-natal child mortality during the first ten years of its life seems to be about 25 to 30%. There is only one snag about the husband sterilisation method. If he is unfortunate to lose his first wife after a few children and after vasectomy has been performed on him, difficulties may arise when he wants to marry again and if the second bride to be is keen on getting a baby. In my opinion this should be a minor consideration from the point of view of the national emergency of the problem. In individual cases who desire children later on by the second wife, it is possible to restore fertility of the husband by surgical anastomosis of the severed vas deferens. Surgical occlusion of the vas deferens does not appear to abolish spermatogenesis. A case has been recorded in American literature where sperm was observed 19 years after vasectomy. It should be mentioned that although the operation of vasectomy could be performed by a physician who is familiar with ordinary surgical technique, the re-construction operation of restoring the continuity of the vas deferens requires the services of a skilled surgeon. I believe an increasing number of middle and low income educated population of the cities and towns are voluntarily submitting themselves to sterilisation by vasectomy or tubal ligation. Such a lopsided practice of birth control confined to the educated intellectual class in urban areas leaving the rural sector high and dry will create serious problems of urban-rural and inter class fertility differentials. It would be necessary for the State Family Planning Board to call for monthly reports of sterilisation operations from hospitals and private practitioners with details of the socio-economic and educational status of the patients.

It is easy to state the case for birth control, but to carry the message, motivate the rural illiterate population and create an urge for family limitation, for a better standard of living for a longer span of healthful life by fighting and overcoming ignorance. apathy, tradition and folk belief is a challenge to every one of us, the rulers, the leaders, the politicians, the doctors, social workers and the rest of the educated minority. If it is conceded that a predominantly illiterate country like ours, can operate a democratic political system with adult franchise, by the same token ignorance and illiteracy should not prove an insuperable barrier to spreading the gospel of family limitation by purposeful control of fertility. We have been wedded to the unreal philosophy of poverty living and so-called high thinking. It is time we turn a little to high living and plain thinking. A hungry stomach and a diseased body are not conducive to any high intellectual artistic or spiritual effort but seems to encourage only unlimited procreation. It is a matter for gratification that a new and resentful awareness of poverty is in the air even among the traditionally apathetic sections of the pouplation. The traditional method of blessing a newly married couple with 16 children and a long life may have some meaning ten centuries ago when the population of the entire world was only 250 millions, amounting only to two thirds of the population of our country in 1951 ; but to continue to bless our married couples with un-numbered progeny is sheer anachronistic mockery and a curse in disguise in the present context, when the carrying capacity of this Bharat land of ours has already reached an all time low and is bursting its seams. The blessing slogan will have to be changed to a limit of three and long life. The present generation is witnessing a sort of run away human inflation, a kind of what Scientists call ' functionless fertility '.

A discerning and sympathetic observer W. H. Forbes as quoted by Reynolds writing on food and population as illustrated in India, notes that India was once rich, powerful and expansive as evidenced by the remnants of the Indian civilisation in the East Indies, Siam and Cambodia "What happened ?" he asks, " what great disaster or gross mismanagement has reduced her to permanent poverty and starvation ? Then he answers. There has been no great disaster. There has been merely the predictable operation of a natural law, a relentless rain of small disasters in the form of babies, 46 per thousand persons a year. This with the help of transportation and public health measures has finally depressed the ratio of resources to population to its present level". The choice is control, wilful control of human fertility. Both economic development and fertility control should go hand in hand. The first has already been accepted by the people. But the second is yet to be sold to the people and rapidly implemented.

Members of the medical profession both in the public and private sectors besides preventing and curing diseases have to play the star role in this most urgent of all public health measures for the control of fecundity. The motive for birth control must be created among the masses before the method could be recommended. The spoken word coming from the doctor will have more value than all the other methods of propaganda.

The vicious chain of high birth rate, declining death rate, dwindling carrying capacity of the land, increasing unemployment, minimal calories of less than 1000, increasing poverty, upsurging morbidity rates, should be broken at the first link of uncontrolled births. The ancient practices of infanticide and abortions are unethical and inhuman and cannot be recommended as a national policy when we have opted for democracy and the welfare state, although a civilised country like Japan forced by the tremen-

dous rate of population growth (90 Millions) have legalised abortions and it is stated that in 1949, 600,000 legalised abortions were performed in that country. During a 9 year period, the birth rate of Japan has declined by half annually. Apart from the inhumanity and danger to health, of the mother, it can never be a permanent solution. The communist China, forced by the calamitous logic of uncontrolled births has recently reversed its policy on Family planning and contraception. A news paper report from that country says that 70% of the women workers in urban areas have been using contraceptive appliances and herbs. Abortion is legalised to bring it under supervision, but not specifically encouraged. There is opposition to the use of the sheath based upon the long standing belief that the male absorbs virtue from the female secretion. Humane scientifically tested methods of birth control are available. Let us add one more to the four freedoms of democracy, the freedom from excessive uncontrolled breeding. I do not pretend to be either, a population expert or birth control expert, but as an ordinary citizen trained in modern scientific medicine and deeply disturbed at the current situation in our country has dared to talk to you the comrades in the fight against disease, in a sort of fire alarm manner and it shall be a solemn duty enjoined on you by a sick and spawning society to preach, convince and implement the government policy in your day to day contact with the people. A few years ago I was invited to take part in a function held to celebrate the ten thousandth baby born in a hospital in Madras. I thought at the time, though I did not express it that it should have been a matter more for grief than for joy. Philanthropic minded persons who come forward to donate and endow Maternity Hospitals in the rural areas or small townships may be persuaded to endow birth control clinics in association with the hospital. The University may be endowed with liberal funds, to carry on fundamental research on the biology of human reproduction. I am not a prophet of doom but the writing on the wall is there for anybody with intelligence and social responsibility to see and ponder. To the slogan of 'grow more food campaign may be added 'grow more food but breed less'.

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* NON-MALIGNANT DISEASES OF THE THYROID

by

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Choice of the subject :

1. Not having been discussed in any of our association meetings in recent times.

2. The subject being *a fascinating one* as any other subject in Endocrinology. Though not so common, the diseases of the thyroid are met with often enough both in private and hospital practice to warrant a discussion in an Association.

3 The subject is *rather ill-understood* as far as I can make out from my experience in the Govt., Erskine Hospital for the last nine years, before it became a teaching institution.

4. To create an interest in the subject and to find out whether some of the conditions as Lymphadenoid Goitre (Hashimoto's disease) and *suacute Thyroiditis are really rare in our Country*, or that we miss the condition by not being aware of them.

LEVITT in his Huterian Lecture says: 'Nothing is static Change is constant, not only in the sequence of life, but also in the understanding thereof. To accept meekly and to repeat slavishly the time-honoured clinical beliefs of the past without re-assessment, spells retrogression. This is no more apparent in the field of Endocrinology in general, and Thyroid disease in particular.' And Levit has got his own theories regarding disease of the thyroid, which he integrates into connected conditions, from the ordinary simple goitres, Grave's disease, to even malignant conditions of the thyroid.

I would like to alter the title as *Non-inflammatory and Non-malignant goitre*, instead of non-malignant diseases of the thyroid. As even this is so vast that I would be able to touch only the salient points of the clinical and therapeutic aspects of them, without going into details of pathology etc.

Classification : A perfect classification of the disorders of the Thyroid is not yet possible owing to the lack of sufficient knowledge on the subject of aetiology Physiology and Pathology of many thyroid diseases. The term goitre denotes enlargement of the Thyroid gland whether or not the enlargement is diffuse or nodular, is benign or malignant, or attended with symptoms and signs of increased or decreased functions.

In the mountains of Western Bulgaria runs a river, which flows southwards across Eastern Greece. It is called Struma and it has given its name to the cervical swelling for so large numbers living on its banks and its tributaries. The world *goitre* is probably a corruption of the Latin word '*gutter*' *meaning throat.*

Classification :

(1) **Simple goitre :**

i. Endemic.

ii. Sporadic (residual).

A. Physiological ; Puberty, pregnancy and menopause

* Lecture delivered at the Tiruchy Branch of I. M. A. on 27—10—57.

B. Clinico-Pathological

C. Single adenoma.

i. Diffuse—Parenchymatious

ii. Nodular Colloid

(2) **Toxic:**

i. Primary

ii. Secondary

(3) *Chronic thyroiditis*: Hashimoto's

(2) Reidel's Ligneous or woody thyroid

(3) Dequirvain's disease:

(subacute thyroiditis or (pseudotuberculous thyroiditis)

It is generally believed that all Thyroid enlargement not due to neoplasia is due to the influence of Thyrotrophic hormone of the anterior pituitary, though proof of this hypothesis must await an accurate routine method for estimation of Thyrotrophin in the blood and urine. It is thought that a low value of Thyroxin in the blood stream causes a high output of Thyrotrophin, the pituitary attempting in this way to correct the deficiency. The healthy thyroid reacts by production of thyroxin either without enlargement or with slight temporary enlargement like that seen at puberty preganancy and during luteal phases of the menstrual cycle. *The unhealthy gland* fails to increase its output and in consequence, subject to further pituitary stimulation, in consequence of which it increases in size, *attempting to make up in quantity what it lacks in quality.* If the whole of the gland is equally sensitive to pituitary stimulation, a diffuse enlargement results; but if one part of the gland is more responsive than the rest, this part increases and by hyperplasia assumed often successfully the task of supplying the body's need of Thyroxin. The reason why one part only of the gland responds or several such parts is unknown. It has along been recognised that cancer of the thyroid is often found in discrete nodules, but how often. Estimates vary from nil to 7 to 30%. *Remarkable advance in our knowledge of the pathology and treatment of goitre have occurred in the past 20 years.* Perhaps most spectacular are those resulting from the exploitation of Radio-active Iodine as an investigating tool. But hardly less important are those resulting from the use of antithyroid drugs..

Simple Goitre:

Any goitre which is neither inflammatory nor malignant and not associated with toxic features may be considered as simple.

Endemic or Sporadic (Residual):

Any factor which reduces thyroid secretion or increases the demand produces goitre. The percentage incidence of visible glands in an adolsescent population is a useful index of their iodine consumption. A critical study of available evidence makes it clear that multiple factors are involved in the causation of endemic and sporadic goitres. Purely exogenous iodine deficiency either in soil and water, than lack of utilisation may prove to be the immediate cause. But definite aetiology is still unsettled. *A sporadic goitre is probably determined by genetic, sexual, dietary and other factors.* The immediate cause of simple goitre is failure of the thyroid gland to obtain a supply of iodine sufficient to maintain its normal structure and functions. The failure is usually brought about by basic environmental deficiency of iodine. It may also be caused by factors which interfere with availability of dietary iodine or which impose an abnormal demand on the thyroid.

The goitrogenic factors are:

1. Iodine deficiency.

2. Pollution of water supply: infection (Maccarison)—doubtful,

3. High calcium & fluorine content of water.

4. Vitamin deficiency.

5. Struma medicamentosa e.g. thiocyanides given for high BP thiocarbamide in gout, *Resorcinol* for leg ulcers, *PAS*, Aniline derivatives like Sulphaguanidine.

Clinical Features :

Types :

1. Visible to the trained observer soft smooth and symmetrical.

2. Conspicuously enlarged, showing possible assymemetrical forms or nodular change.

3. Showing a degree of firmness, assymmetry or nodular change which can be regarded as definitely pathological. The small smooth and symmetrical enlargement in young children is a parenchymatous goitre. In adults most goitres are nodular or diffuse colloid type.

Non Toxic Diffuse Goitre :

(Colloid of Parenchymatous)

Signs and symptoms: This form of goitre is generally asymptomatic. In non goitrous regions its presence may be unnoticed by the patient until observed by others or by a Physician. In endemic areas, the goitre is usually larger. Production of symptoms depends upon the size rate of growth and degree of intrathoracic-extension. Very large goitres may produce exertional dyspnoea through compression of trachea especially in children and young adults. Rapid growth may similarly produce dyspnoea. *Spasmodic nonproductive cough, stridor, hoarseness and dysphagia are seen only with intrathoracic extension. Rarely bradycardia and syncope may result from pressure of goitre on the Carotid sinus.*

In the vast majority of cases, thyroid function remains normal. But occasional failure of adequate function and mild hypothyroidism are met with.

Clinical Course :

In endemic areas goitre first appears in early childhood more frequently in girls than in boys. In non-goitrous districts, it is said that it is not seen until puberty, but I have seen quite a few cases in young girls before puberty. Diffuse enlargement may appear only during pregnancy, in considerable number of cases. Once the goitre has developed, it may slowly regress and disappear or it may remain unaltered. Increase in size and development of nodules usually occurs in third or fourth decades of life. This is particularly true of longstanding goitres. The nodules in turn may remain stationary or increase in size, but they rarely regress. Pregnancy may increase size of the goitre with incomplete recession after parturition.

Prophylaxis and Treatment :

Supply of iodine salts in endemic areas: The treatment of diffuse goitre once developed is best accomplished by the use of dessicated thyroid, in daily doses of 1 to 3 grains. This reduces the thyrotrophic hormone secretion from the Pituitary. Rapid regression of the goitre after a period of weeks or months has occured in many cases.

The use of Iodides has proved valuable in occasional cases. *There is no fear of hyperthyroidism being induced by iodides.* Treatment either with thyroid extract or iodides should be continued for months or even years after the goitre has regressed, to prevent recurrence.

Surgical Treatment :

Subtotal thyroidectomy : only to relieve pressure or to eliminate potential risk of malignant or toxic change or for cosmetic reasons. Toxic or malignant change

is remote so that surgical treatment is only to relieve pressure or for cosmetic purposes.

Non Toxic Nodular Goitre:

An irregular enlargement of the thyroid gland containing one or more discrete nodules and usually associated with euthyroid function. This is the common type of nontoxic goitre seen and is *most often wrongly diagnosed as adenoma. Most of the cases disgnosed as adenoma are nodular goitres.* Though clinically single nodules are palpable, on more careful examination multiple modules are felt, or seen at operation. It occurs with greater frequency in areas of high endemicity, and some that in later age groups than those in whom diffuse goitre appears, being particularly common after the age of 30 yrs. This later age incidence is due to the fact that most nodular goitres evolve from preexistent diffuse colloid goitres in endemic areas. In endemic areas, in persons between the ages of 70 and 75 years of age, 100% of the thyroids are said to contain nodules. Aetiology is the same as diffuse goitres, the nodules being formed by the involution-hyperplasia cycle. *It is also frequently seen in individuals who have never resided in goiterous areas, and who have never had diffuse colloid goitre. These are the types which we meet with here,* where patients are seen with a single nodule without a previous history of diffuse enlargement, which is diagnosed or *misdiagnosed as adenoma.* These are really cases of nodular goitres where only one nodule is clinically felt.

Signs and Symptoms:

Depend on the size and location of the nodules. Small nodules if substernal, may produce symptoms like cough, dyspnoea, hoarseness and dysphagia.

Cystic changes can occur and sometimes calcification which give rise to very hard nodules. Roentgenography is necessary for demonstration of tracheal pressure and of substernal extension. Laryngoscopy will demonstrate impairment of vocal chord function.

Clinical Course:

1. May remain the same for long periods of time.
2. It may grow and press upon neighbouring structures.
3. It may degenerate and be the site of haemorrhage.
4. May become malignant.
5. Very rarely hyperfunction within itself or more commonly with perinodular hyperfunction.
6. Very rarely it may involute and disappear altogether.

Diagnosis:

Is by finding one or more dicrete nodules within the substance of the gland.

Treatment:

Present concensus is that:

1. All nodular goitres should be removed by subtotal thyroidectomy if there is pressure, haemorrhage, retrosternal extension or evidence of malignant change.

2. As the evidence of malignant change is difficult to find out clinically, as it may exist without undue hardness or fixity, all nodular goitres in younger age groups should be removed by subtotal thyroidectomy, as a prophylactic measure.

3. In later age groups (45 yrs.), where the goitre has been present for a long time without evidence of malignant change, they should be excised only when they produce symptoms. Asymptomatic cases in later age groups should be kept under observation. Most of these cases which are wrongly diagnosed as adenoma are treated with enucleation of the single

nodule without exposing the whole thyroid, and exploring for the presence of other nodules which is the cause of recurrence.

Single Adenoma :

Is rare. This is true benign neoplasm. Such tumours have complete capsules differing in this respect from nodular goitres in which imperfect capsulation is found. The capsule of adenoma is composed of fibrous tissues and may show hyaline, mucoid, calcareous or osseous changes.

Treatment :

The risk of malignant change found in single adenoma has been variously estimated from 1 to 25% but it is definitely more so than in the case of nodular goitres. *Especially so in young persons. Recently Radio iodine studies of* all nodules in the goitre *have been classified into three types.*

1. *Hot,* 2. *Cold* & 3. *Neutral*; i.e. high uptake, no uptake and ordinary uptake of Radio iodine. The cold nodules are most likely to change malignant and so should be removed at once. The hot ones are likely to produce secondary toxic nodular goitres. The neutral ones are like normal thyroid. As we have no such facilities here for radio iodine studies all single adenomata should be removed with an area of healthy gland tissue all round and not enucleated from inside the capsule. The presence of a definite capsule makes the single nodule more likely to be an adenoma.

Toxic goitre :

Primary and Secondary : The signs and symptoms of toxic goitre are too well known and the aetiology is only a question of theories. *It is said that no great Statesman has suffered from thyrotoxicosis; but it is not certainly uncommon in the highly cultured and the artistic.* The primary form is due to psychogenic cause in addition to so many others. But the secondary is always thyrogenic.

Treatment :

1. Surgical (short term)
2. Medical (Long term.)

To determine the type of treatment :

1. Severity &
2. clinical variety should be determined

Severity :

1. First degree (Sleeping pulse rate not above 90.)
2. Second degree (90 to 110)
3. Third degree (Above 110)

Clinical variety :

1. Medical group
2. Surgical group
3. Intermediate group. This is to be decided considering all factors.

Medical :

Mild first degree group of cases, i. e., sleeping pulse rate of not above 90, require only conservative treatment, with sedatives and reassurance. No antithyroid drug is necessary. Even Iodine is not given. This is to be differntiated from anxiety state.

2. Masked hyperthyroidism i. e., unexplained restlessness or diarrhoea, amenorrhoea or sterility and most significant of all auricular fibrillation.

3. Youth, age and stress : i. e. puberty, pregnancy and menopause.

4. Recurrent post operative thyrotoxicosis.

5. *Malignant exophthalmos with ophthalmoplegia.*

6. Poor operative risk.

All these cases are treated by medical measures like rest sedative, reassurance and psychotherapy, Iodine and antithyroid drugs.

Drug therapy of Thyrotoxicosis:

One of the following drugs may be used:

1. *Methyl Thiouracil*: Initial: 0·4 to 0·6 Gramme per day maintenance 50 mg. to 0·2 G.
2. *Propyl Touracil*: Initial 0·3 to 0·4 G Maintenance: 0·1 G.
3. *Carbimazole*: (Neo m e r c a z o l e)
   Initial: 45 to 60 mg.
   Maintenance: 5 to 15 mg.

Initial dosage must be kept up until such time when the euthyroid state is reached and then the maintenance dosage has to be kept up for nearly a year.

Ultimate result of drug therapy:

About 55% of patients who have had adequate therapy for a year or more get a permanent remission. *Relapse, if it is going to occur will usually occur within six months of stopping treatment.* Those who relapse after adequate treatment will probably relapse again after further treatment.

II. *Surgical Treatment*:

1. Pressure symptoms.
2. Toxic nodular goitre. (i.e. secondary toxic goitre where the cause being thyrogenic).
3. Failed medical treatment.
4. Social & economic factors.
5. Malingnancy.
6. Size.

III. *Intermediate group*:

To be decided by considering.

1. Age.
2. Attitude of the patient
3. Facilities available.

After the advent of anti-thyroid drugs, thyroid surgery has been made very safe, with a mortality of less than 1%. *But still if facilities for operation are not available, medical treatment should be given a trial in all cases as a living problem is better than a dead certainty.* Long term medical treatment should be continued atleast for a year with maintenance dose. *Failure should be accepted if there is no response for two months.*

Radio iodine may prove to be carcinogenic; so reserved for medical and surgical failures and for diagnosis of masked cases. But some authorities are of opinion that the danger of malignancy is only theoretical in the doses employed and is practically non existent. *As a matter of fact, thiouracil group of drugs are said to be more carcinogenic.* It is possible to cure thyrotoxicosis in 6 to 8 weeks by a single dose of radio iodine. *There is no risk, no scar, no morbidity and no mortality.* Radio iodine is being used in Calcutta and I am told in Vellore and we are likely to get it in the near future. *Stable iodine like morphia in acute abdomen is said to mask the symptoms, but not cure the disease* (Riddel). But authorities like Gregall and Lesses claim that ordinary Lugol's iodine or Pot. Iodide cures many cases and as it is absolutely harmless and safe, it must be tried even before the thiouracil group of drugs. If not effective then thiouracil group of drugs can be tried. *It is wrong to believe that surgery is very hazardous after failure of iodine therapy.* It might have been so before the advent of the antithyroid drugs.

The New Concept about Exophthalmos:

The original concept that one anterior pituitary hormone regulated both the thyroid as well as orbital tissues must undergo reorientation in the light of the

controlled experimental work of Jefferies. He has succeeded in establishing the existence of two separate factors :

1. Thyrotrophic

2. Exophthalmic both emanating from the anterior pituitary. Exophthalmic is the name given to the later factor. The thyrotropic hormone has been shown by Green to consist of two separate entities (1952) i.e. the proliferative and the growth factor which is responsible for the hypertrophy and hyperplasia producing goitre. *The secretary or the metabolic* factor accounts for the production of thyrotoxicosis being primarily concerned with the functions of the thyroid. The site of control of the proliferative hormone was shown to be the hypothalamus while that of the secretary hormone was found to be in the pituitary gland.

The triad of exophthalmos, goitre and thyrotoxicosis, first seen in 1835 by Grave and described as exophtahalmic goitre, has been brought into clear perspective in the year 1953. Contrary to the original Grave-Parry-Basedow concept, exophthalmos may exist without goitre hyperthyroidism just as hyperthyroidism can occur without exophthalmos or goitre.

Chronic Thyroiditis :

I have included only three conditions of almost unknown aetiology under this head of chronic thyroiditis, which are probably not of inflammatory origin.

The Three conditions are :

1. Dequervain's disease, (subacute thyroiditis, pseudo tubercular thyroiditis, granulomatous thyroiditis.)

2. Hashimoto's disease or Struma Lymphomatosa.

or Lymphadenoid goitre,

3. Reidel's Thyroiditis or ligneous or woody thyroid.

1. *Subacute thyroiditis :*

Incidence : This condition is increasingly recognised by Cryle in Cleveland clinic, USA and in Scandinavian countries, in the past two years. More cases have been reported in past two years than in the past 20 yrs. Either it has increased in frequency or being *recognised more often probably the latter.* Women are affected six times as often as men and it is most common in the middle forties.

Aetiology :

Aetiology has not been proved; probably it is of viral origin.

Symptoms :

Acute onset with fever, pain and tenderness and prostration, and frequent history of influenza like illness preceding the localisation in the thyroid, favour this hypothesis.

Most cases are mild following an upper respiratory infection. Thyroid is enlarged and painful. There is fatigue and low fever. In rare cases, the disease may be severe with intense pain radiating upto the ear, exquisite tenderness of the gland and elevation of temp 104, chills, sweats and prostration. Pain on swallowing is a common complaint and the patient may have sore throat.

On Examination :

The thyroid is uniformly enlarged, the enlargement may-start in one lobe and spread to the other. It is tender, and sometimes exquisitely so. The BMR is raised to above 15% in a third of the cases, but not above 25%. The systemic reaction is out of proportion to the elevation of BMR,

Clinical Course :

Even without any treatment, natural course of the disease is towards spontaneous recovery. Without treatment however, the patient may be incapacitated for days or months. Exhaustion and prostration are out of proportion to the manifestations of the disease. Even in most severe cases, there is no residual hypothyroidism.

Treatment :

Responds promptly and completely to Roentgen ray therapy. The pain and tenderness usually subsides within a few days and complete resolution takes place within two to three weeks. Thyroidectomy was done by Cryle before the value of X-ray therapy was recognised, and the results were good. Cortisone, ACTH and Antithyroid drugs were very effective.

II. Hashimoto ' Disease :

Described by Hashimoto of Japan in 1912. The incidence is about 1% of thyroidectomies. It is rare before 40, but may occur at any age. There is a striking preponderance of women. The gland is uniformly enlarged. The surface of the gland is smooth. The aetiology is quite obscure. *There is a theory that it may be an allergic reaction to the patient's own thyroglobulin.* The patient is usually a woman of late forties inclined to obesity with facies of early myxoedema, and the BMR suggests a mild degree of hypothyroidism.

The thyroid is moderately enlarged, uniform, moderately firm and moves freely with deglutition. There is no evidence of infiltration and attachment to each the surrounding structures. The outline and borders are well defined. Pressure symptoms are seldom prominent except in rare cases where the goitre is exceptionally large. The worst that happens is dyspnoea on exertion due to pressure over the trachea. The progress of the disease is towards myxoedema even without operative treatment.

A firm goitre which appears in a middle aged woman reaches maximum in a few months, involves other parts of the gland, causes only moderate degree of dyspnoea but neither produces severe pressure effects, thyrotoxic symptoms, pain, tenderness, pyrexia of other inflammatory phenomena is almost certainly a struma lymphomatosa. If to all these features be added, absence of any evidence of involvement of extra-thyroid tissue, and presence of some degree of hypothyroidism, the diagnosis has been placed beyond a par adventure.

Nevertheless, it is difficult to differentiate from carcinoma in very many cases,

Treatment :

Main indications are :

1. To establish that the condition is not a malignant neoplasm.

2. To relieve pressure symptoms if present.

Subtotal thyroidectomy is easy ; the gland shells out easily.

X-ray therapy is quite effective and can be tried in cases of sure diagnosis or after it is established by biopsy. Whatever treatment is given, ultimately the patient becomes hypothyroid and requires thyroid medication continuously.

III. Reidel's Disease .

The disease is characterised by the appearance in the thyroid of a hard mass which latter tends to invade the surrounding structures such as tracheal wall the carotid sheath and cervical muscles. Its clinical features closely simulate slowly growing malignant disease but pathologically it is not. The cause is unknown.

The pathological process is the gland of the nature of a sclerosis which

strangulates and destroys the secretory parenchyma, but there is no evidence of hypofunction. It is rarer than Hashmoto' struma and occurs in men and women of younger age period.

Signs and Symptoms :

The disease is slow in progress. Pain is a common symptom and may be localised to the gland or referred to the ear, the back of the neck or the shoulder of the corresponding side. It is usually unilateral with extension to the extra-thyroid tissues. The goitre is small and very hard. Grave pressure effects like affection of the voice due to involvement of the recurrent laryngeal nerve, dysphagia and dyspnoea are common. The diagnosis as difficult, as it is difficult to distinguish it from malignant neoplasm, but the intense hardness of the tumour especially occurring in a young adult associated with pressure symptoms out of all proportions to the size of the tumour will make a diagnosis of Riedel's, atleast a possibility.

Treatment : is extremely unsatisfactory, in view of the involvement of the surrounding tissues. Most authorities including Riedel himself are of opinion that it is best to resect a part of the mass to relieve pressure symptoms as far as it is possible, and the long term results are good. X-ray is not useful. In лare cases the disease progresses whatever be the treatment, and the patient dies of asphyxia. There are also cases recorded in which spontaneous regression occurred without any functional disability.

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ASSOCIATION NEWS

CHETTINAD BRANCH

The monthly meeting of the association was held on 26—10—'57 at the S. M. S High School, Karaikudi. Dr. Miss H. Eriksson presided.

The circular regarding the proposed amendments to the Madras manufactured drug rules 1932 and proposed amendments to the dangerous drug act was read. All the doctors felt that it involves a lot of clerical work and authorised the secretary to draft a resolution and send it to the secretary to Govt., Home department, Madras.

Dr. K. Raghavan, MBBS Medical Officer and Lecturer, Alagappa College of Physical Education, Karaikudi gave an interesting talk on "The contribution of Physical Education to Health".

* * *

The monthly meeting of the above association was held on 9—11—'57 at the S. M. Hospital, Tiruppatur. Dr. Miss H. Eriksson presided.

Dr. H. L. Wallden, M. D. spoke on "Splenectomy in Tropical medicine with demonstration of cases".

MADRAS CITY BRANCH

A special General Body meeting of the association was held on 12—11—57 in the premises of the Madras Medical College, Madras with Dr. R. Sankaran the President in the Chair. Some circulars were read for information to the members. The following were elected as representatives to the Central Council.

1. Dr. K. V. Swamy
2. Dr. P. Krishnaswamy
3. Dr. P. Alasingari Naidu
4. Dr. A. Srinivasulu Naidu.

MADURAI BRANCH

The Monthly meeting of the Association was held on Saturday the 16th November '57; under the Presidentship of Dr. K Balakrishnan, M.B B.S., T.D D., Dr. K. A. Kalyanam, F.R C S., (Edin) D. M. R., delivered a lecture on 'Problem of Varicose Veins and Gravitational Ulcers'.

* * *

The monthly meeting of the Association was held on Friday the 13th December '57, under the Presidentship of Dr. K. Balakrishnan, MBBS. TDD, Professor Dr. Von. Rosen, Orthopaedic Surgeon, Sweden, delivered a lecture on "Treatment of Poliomyelitis."

SOUTH ARCOT BRANCH

The General body Meeting of the Association was held at the Government Head Quarters Hospital, Cuddalore, on Saturday the 16th November 1957.

Dr. M. V. Kurian, M.B., B.S., D.L.O. (Lond) gave a talk on "Common E. N. T. diseases in practice".

SOUTH KANARA BRANCH

A meeting of the Association was held on 31—12—1957 when Dr. S. C. Sen, a past President of I. M. A. addressed the members on "Some Problems of the Medical Profession".

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Resolutions passed at the open session of the 12th Madras State Medical Conference, Coimbatore on 24-11-1957

1. "Resolved to request the Government to enforce strictly by a restriction order for the sale of antibiotics by chemists or other license holder except on a prescription by a registered medical practitioner."

2. Resolved to request the Government of India and the State Government to retain English as medium of instruction in High Schools and Colleges in the interests of progress in the field of national and international science and literature."

3. Resolved to request to sanction the same scale of pay to the local board servants as for provincial medical personnel and further resolves to request the Government to hasten the process of provincialisation of local board medical officers."

4. "This Conference is of the view that the proposed amendment to rule No. 25 of Drugs Rules published in the gazette notification of September 1957 is unnecessary as it will throw needless additional work on the already overworked medical practitioners and will further involve needless inspections by Government Officers; and if any such safe guard is required under the Drugs Rules the Indian Medical Association and the Madras Medical Council may be asked to suggest suitable measures."

5. "Resolved to request the Government to classify all medical practitioners of modern scientific medicine of 5 years standing and more as essential services on a par with Government Medical Officers."

6. "This Conference feels that in implementing the Employees State Insurance Scheme panel system should be preferred and if it is decided that service system should be adopted the medical practitioners in the area where the scheme is introduced may be given preference in the employment in paid dispensaries. This is recommended for the reason that as the E. S. I. Scheme is usually introduced in large cities and towns leaving the medical practitioners of the area and appointing additional medical officers by Government will only add to the overcrowding of medical men in large cities and towns thereby preventing freshly qualified doctors from settling down in rural areas."

7. "This Conference resolves to record its appreciation and grateful thanks for the kindness and help rendered by Mr. G. D. Naidu of Coimbatore in placing his palatial building and the services of his men at the disposal of the Conference authorities, and to Mrs. G. D. Naidu for all the help rendered to us in conducting this Conference with success during the absence of Mr. G. D. Naidu in London, and requests the General Secretary of the Conference to communicate this resolution to Mr. G. D. Naidu in London by a cablegram and to Mrs. G. D. Naidu in Coimbatore.

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Packing:–Bottles of 50's & 500's.

CICIDON

A well balanced combination of Calcium and Phosphorous together with Vitamins C and D in treating Calcium deficiency disease in general and during infectious diseases and scurvy.

Composition per tablet:

Calcium Gluconate	..	260 mg.
Di-Calcium Phosphate	..	195 mg.
Vitamin C	..	100 mg.
Vitamin D	..	500 I.U.

Packings:–Bottles of 25's & 500's

THE TRINITY PHARMACEUTICALS (INDIA) LIMITED
TRICHUR. (KERALA STATE)